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is in keeping with the reputation of the author. His data, however, are not such as he would have chosen and are subjected, in cases, to severe criticism; he had to accept what was provided. In purpose the experiments were to direct legislation on British fisheries, but the conclusions may be applied to any marine fishery. Some fishes, cod, herring, and mackerel, for instance, are said to be inexhaustible and need no protection; others may be temporarily reduced in numbers by the fisherman. Of these latter the impoverishments are only temporary and are self-curative; nature restores and maintains the balances; extermination, as a result of man's efforts, is apparently impossible. Extended series of thorough scientific investigations are shown to be of the greatest need; for, admitting that it is not possible to exterminate, and that overfishing, through rendering the grounds unprofitable, brings its own correction, the vital question is how best to prevent depletion and to keep up the supply all the time. Aside from the species, each of the various localities must eventually be made a subject of special study, since they differ in readiness of recovery; few are so well situated for prompt renewals as the British Isles, in the broad sweep of the Gulf Stream. The author makes the statement that the California gray whale, *Rachianectes glaucus*, has been entirely destroyed by man.

"**Les Oiseaux**" is apparently the second volume in a series of handbooks on the fauna of France.[1] There is an introduction of two pages on the anatomy of the bird; the rest of the volume is made up of keys to the families, genera, and species of all birds which have been known to occur in France. There is also a brief description of each genus and species, with woodcuts of the heads of nearly every species, and many drawings of the whole bird. The status and distribution of each species are indicated.

The drawings are in the style of the early part of this century; the center of gravity is rarely over the bird's base, and if two birds of the same genus are represented, their bills differ so widely that they might almost belong to different families. The nomenclature and classification are equally antiquated; six orders include the birds which, in a British manual, are divided into seventeen. The descriptions are apparently faithful, and the small compass of the book will doubtless recommend it to field naturalists.

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[1] Acloque, A. Faune de France, *Les Oiseaux*. Paris, J. B. Baillière et Fils. pp. 87–336. 621 figs.

We note several American stragglers: the robin, of course, Swainson's thrush, yellow-billed cuckoo, several waders, and the American bittern, appearing strangely as *Botaurus freti-hudsoni* (Briss.).

R. H.

Heliotropism of Cypridopsis. — The reactions of a representative of the Ostracoda, *Cypridopsis vidua*, to light have been studied by Elizabeth W. Towle.[1] This animal, when dropped into the middle of a trough which is in the course of light rays from a Welsbach burner, may move either toward the source of light or away from it. Observation of individuals shows that an animal may at one time be positive, at another negative. One cause of this variation is found to be "contact." For, however strongly negative an animal may be, it can be rendered positive by being repeatedly taken up in a pipette or by disturbance of the water.

If while a Cypridopsis is moving toward the light the burner be shifted to the opposite end of the trough, the animal will immediately turn and follow it, thus keeping up a positive reaction. Likewise, if it is moving away from the light it may be observed to change its course each time the light is moved, or, in other words, to maintain its negative reaction. The only difference is this: "In all cases the positive response was temporary, while the negative one persisted as long as the animal could be kept in motion." Contact with the sides of the trough or pipette or with obstructions therein causes a change from negative to positive; whereas the change from positive to negative occurs independently of external conditions.

Miss Towle's experiments indicate that Cypridopsis cannot be characterized as positively phototactic, and the use of an India-ink prism as a means of getting regular gradations of light intensity led her to conclude that a photopathic reaction (*i.e.*, a response to difference of intensity of adjacent rays and not to the direction of the same) has *not* been proved thus far for any animal, and probably does not exist. As a result of careful tests with the prism she decides that "the direction of movement of Cypridopsis and of Daphnia in response to light does not result from an effort on the part of the animal to reach a certain optimum intensity. It is determined (1) by the direction of the impinging rays, and (2) by the relative value of these rays as forces acting upon the organism, *i.e.*, by their relative intensities."

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[1] A Study in the Heliotropism of Cypridopsis, *Amer. Journ. of Phys.*, vol. iii (1900), No. 8.